

19980818.ba v02_n175.bam.980818 v02_n176.bam.980818

>From ???@??? Tue Aug 18 18:14:29 1998
Message-Id: <199808181541.KAA09994@sco.theporch.com>
Date: Tue, 18 Aug 1998 10:40:26 CDT
Subject: BOATANCHORS digest 2175

BOATANCHORS Digest 2175

Topics covered in this issue include:

- 1) Re: Modulation xfmr. ID needed
by Charles Ring <charlesr@infonline.net>
- 2) NEEDED
by John Wright <dxer@fl.net.au>
- 3) Fading 310 fixed
by Bill Hawkins <bill@iaxs.net>
- 4) Dials
by Jderm740@aol.com
- 5) HRO plastic tuning strips
by "Lawrence R. Ware" <lrware@pipeline.com>
- 6) Re: More Ultramodulation
by "Arden Allen" <gumbear@pacbell.net>
- 7) Re: New Doerle RX book (review)
by Kargokult@aol.com
- 8) HRO-50 surgery, part 1
by "Lawrence R. Ware" <lrware@pipeline.com>
- 9) Weirdest Command Set 'Conversion'
by Kargokult@aol.com
- 10) Re: More Ultramodulation
by "Steve" <scb@mail.internettport.net>
- 11) Re: High Z 'phone call
by "Steve" <scb@mail.internettport.net>
- 12) Re: More Ultramodulation
by jackiv@juno.com (John M Iverson)
- 13) Re: D.C.Volts on 220 for 30L1?
by k5jv@vonl.com (Lon W. Cottingham)
- 14) Boatanchor resources
by Nick England <nick@cs.unc.edu>
- 15) RE: A Qvestion?
by "A. B. Bonds" <ab@vuse.vanderbilt.edu>
- 16) RE: Modulation xfmr. ID needed
by Ed Sieb <esieb@gmsiworld.com>

Message-ID: <35D8DA58.3C63@infonline.net>
Date: Mon, 17 Aug 1998 21:35:20 -0400
From: Charles Ring <charlesr@infonline.net>

MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
CC: boatanchors@theporch.com
Subject: Re: Modulation xfmr. ID needed
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Tom Smith wrote:

>
> Hi Ed,
> I think most of the earlier Gates 1 kw transmitters used PP 833-A modulating PP 833-A.
> Probably the later ones as well.
>
> Tom Smith N5AMA

The RF finals are two parallel 833A's. There's one on the air (790KC) in the next room as I write this. The same basic design was used by Gates from the late 50's until the end of tubes (for Harris-Gates) in the mid-late 70's. I'm not sure of the tube lineup in earlier 1KW designs.

73 de W3NU

Message-ID: <35D8B74A.65B4@fl.net.au>
Date: Tue, 18 Aug 1998 10:05:46 +1100
From: John Wright <dxer@fl.net.au>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: NEEDED
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

John Wright here from Australia.
Firstly thanks to George for the Drake TR4 manual and the offers of assistance! fantastic folks!
Now after a s-meter for a S27-D.
Also the panadaptor (5 meg), 1032A, not the lower IF panadaptor but the 5meg one.

Also anyone have a manual on the R391 the autotune version of the R390A? or schematics?
Many thanks and best wishes to all. Johnno.

Date: Mon, 17 Aug 1998 21:32:59 -0500 (CDT)
From: Bill Hawkins <bill@iaxs.net>
Message-Id: <199808180232.VAA24476@citrus.iaxs.net>

To: Old Tube Radios <boatanchors@theporch.com>
Subject: Fading 310 fixed

The Tektronix 310 that faded after 5 minutes did indeed have a bad capacitor across the primary of the HV transformer. And Mouser did in fact have a .001 at 1.6KV cap at an affordable price. No more fade, so now I'll have to wash it and tackle the smaller problems.

I appreciate the responses telling of your experience, so I thought you might like to have one more data point in failures of the HV supply.

Regards,
Bill Hawkins

From: Jderm740@aol.com
Message-ID: <66e4ae3.35d8f73f@aol.com>
Date: Mon, 17 Aug 1998 23:38:37 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Mime-Version: 1.0
Subject: Dials
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit

A while back someone asked where they could get HRO dials.

Try Rock- Sea Enterprises
323 E. Matilija St. #110-241
Ojai, Ca 93023

His name is Mike Tobin and his email is Dials@juno.com

If he needs something to copy, I can make him full sized copies for patterns of all the E,F,G,H and J. Have him get in touch with me.

Jack Jderm740@aol.com

Message-Id: <3.0.5.32.19980817224705.0088a390@pop.pipeline.com>
Date: Mon, 17 Aug 1998 22:47:05 +0000
To: Old Tube Radios <boatanchors@theporch.com>
From: "Lawrence R. Ware" <lrware@pipeline.com>
Subject: HRO plastic tuning strips
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

At 23:38 08/17/1998 EDT, Jderm740@aol.com wrote:

>A while back someone asked where they could get HRO dials.
<snip>

I don't advertise on the BA list for obvious reasons:

- 1) Jack is a big gent.
- 2) E-mail ads are not why people join BA.
- 3) Jack is a *very* big gent.
- 4) Advertising is frowned on this list.
- 5) Did I mention how *big* Jack is?
- 6) I appreciate not having to read everybody else's ads here.
- 7) Jack knows where to find me.
- 8) Most commercial/hobby enterprises who subscribe to BA will reply privately to a request for something they have/sell. The manual dealers usually do, the tube dealers do, and I do the same.
- 9) Jack has been known to fold/spindle/mutilate people who don't take the rules seriously. A job *he* takes seriously.

So I'll only say that I make nice reproductions and that an e-mail requesting it will get you the information. :-)
-Larry

Larry Ware
Admirer, Collector, Restorer of National Radio Company
receivers and other artifacts.
Orlando, Florida
lrware@pipeline.com

Message-Id: <199808180449.VAA14750@mail-gw5.pacbell.net>
From: "Arden Allen" <gumbear@pacbell.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: More Ultramodulation
Date: Mon, 17 Aug 1998 21:50:33 -0700
MIME-Version: 1.0
Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: 7bit

Bobbi;

You did it again:

> However, it doesn't take a Fourier Transform, or even a Power Ranger,
> to dope this out as crud. Get some graph paper and draw a sine wave.
Now

> draw it as a modulation envelope at 100%. Note the waveform riding on the
> carrier is still a sine wave. Now take an eraser (or just scribble over)
> so the positive peaks are twice as high. It's not a pure sine wave any
> more. It's gone all lopsided.

Elegantly, you show us how the real world works, ...like kicking a pile of raked up leaves because it's fun and guess what you uncovered in the leaves! Well, I see the bug in this rambling thread. Before it hides again, (I can't stomp on the little critter, I haven't yet atoned for all the mayhem I committed against Mother Nature in my youth) I'll describe it to you:

Seems like in Nature as in the World of Man (splzzsczstt!), things that have different names are really the same. And so it is with Fourier. What we are babbling about is devices that perform the function of having their transfer functions varied by a controlling signal. A linear modulator will change its transfer function an equal amount for each equal change in the control input. For example, an amplifier that has a gain of 10, that can have its gain changed to 11 by a control change of from 4 to 5, a difference of 1, will therefore have a gain of 12.1 if the control is changed by 1 again from 5 to 6. In other words the gain is increased by 10% for each increase of 1 of the control. You get funny numbers but that's linear modulation. Let's try again: If you double the plate voltage of a (ideal) class C amplifier we all know we get twice the voltage output. If I increase the plate voltage three times I get 3 times the output voltage. From 2 to 3 times the increase is 50%. From 3 to 4 times the increase is 33%. From 4 to 5 it's 25%, etc. Are you confused yet? The **correct** answer according to Fearless John is that the same calculation is used each time there is a change in the control thus yielding the same predictable result. That's linear modulation.

That's the way it is with all these wonderful things we call detectors, mixers, converters, multipliers (ever use a 3 quadrant multiplier?) and modulators. They all do the **same** thing, which is, while the transfer function (gain, attenuation, transconductance, etc.) is being changed the happy smiley sine wave that got caught in the process gets all bent out of shape and has little kittens consisting of **new** frequencies. In summary, as long as the transfer function remains **static**, the sine wave is unmolested and the gozouta looks just like the gozinta. Start messing with the transfer function and you can add, subtract and multiply frequencies, just like in the fifth grade.

I don't think Fourier described it that way but I'm trying to give Bobbi a run for her money while she's down with a bug. Speaking of bugs, back to the subject under foot: So what if your modulator is **non-linear**. Nothing much, you just get more new frequencies. The more distortion, the more the bandwidth is occupied by the shredded fundamental frequency. At

this point there is a Physicist getting ready to invoke some law about the conservation of energy. Yeah, no power gain in the process means you've taken the energy out of the harmonically pure sine wave and spread it around the spectrum.

The difference between modulation and distortion is that in modulation the frequencies you generate contain the information you are trying to convey to that other antenna and in distortion you are generating more frequencies than are necessary to do the job. When you *ultra-modulate* a signal you abuse someone else's detector to get his attention and run the risk of getting more attention than you desire. The little bug in the pile of leaves is the one that bites when you try to shift the sine waves shape at the same rate that the audio itself is occurring, intentional distortion on the fly. A serious attempt at ultramodulation would be to start cranking up the gain *before* the big loud syllable is uttered, sloooooooooowly, so that you don't create new frequencies beyond the audio bandpass of WKN649BLM (Big Loud Mouth). You gotta low frequency modulate *ahead* of the audio stuff. That takes a fancy audio delay filter so that everything works OK. NOT to be found in any *sane* ham's rig.

Arden Allen KB6NAX Vallejo, CA gumbear@pacbell.net

From: Kargokult@aol.com
Message-ID: <9ea2fec.35d90b14@aol.com>
Date: Tue, 18 Aug 1998 01:03:14 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Mime-Version: 1.0
Subject: Re: New Doerle RX book (review)
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit

In a message dated 98-08-17 16:02:14 EDT,
MNHopkins@aol.com writes:

<< It all starts with the introduction of the 19 tube in 1933, Lindsay tells us. These new triodes made it possible to make a two-tube "blooper" receiver like hams used from a kit, and the mysterious Mr. Doerle did just that. >>

---actually, the classic Doerle Receiver used 2 type '30. this design predates the '19 tube 'Twinplex circuit, which of course offered the same circuit in a single bulb receiver.

Mr. Doerle is mysterious, i suppose, because no one knows what became of him after his articles which started the popular wave of shortwave radio building. one of the magazines, was it HR or HRH, in the 70s or 80s had an article about an attempt to learn Mr. Doerle's fate; despite the unique name, the effort came to naught. i wish i

had time to persue this; i think our illustrious radioman-ancestors
deserve better remembrance.

73, hue miller KA7LXY

Message-Id: <3.0.5.32.19980817233932.0086abd0@pop.pipeline.com>

Date: Mon, 17 Aug 1998 23:39:32 +0000

To: Old Tube Radios <boatanchors@theporch.com>

From: "Lawrence R. Ware" <lrware@pipeline.com>

Subject: HRO-50 surgery, part 1

Mime-Version: 1.0

Content-Type: text/plain; charset="us-ascii"

A while back a pretty ratty looking HRO-50T wandered in here at
the "Wayward Home" in forlorn shape. The subject of unspeakable
experiments with grafting solid state parts & pieces mixed with
somebodies idea of a half baked SSB/product detector had left this
poor old radio headed for my parts rig pile.

The poor thing sat for months among a number of other long dead donor
radios and other assorted flotsam waiting to have what was left of
its guts ripped out. :-(

Then a strange thing happened: Whilst sorting/cleaning/testing, etc.
a number of items destined for the upcoming Shelby hamfest, it
caught my eye again. "You know, under the dirt, that is still a
pretty good looking old beast" thinks I.... "Perhaps someone would
be interested in a project National. I should put it on the bench
and see how bad it is."

Well, one thing led to another and before long onto the test bench
it went. Hummmm.... Solid state power supplies, non standard
power transformer, non standard audio output transformer, home
made modules where the crystal cal. and NBFM units belong. :-(
Extra little IF can and crystal in the middle of the IF area,
Couple of extra BNC connectors on the back, still
it looks rather neatly done from above, wonder if it works?

Getting out the Variac resulted in a promptly blown fuse. :-(
"This is *not* a good sign," thinks I....

OK, off comes the bottom cover... OH NO Mr. Bill! This looks very
very bad. The under chassis inside is a mess in the power supply
area. Half a dozen loose filter caps just hanging on overheated
wiring fell out as it was opened.... :-(
Well I guess that could explain the blown fuse.... The replacement
power transformer and solid state mods were installed by someone
who clearly felt that nothing can't be fixed with a big enough

soldering iron. :-(

It appears he was also a fan of low voltage bell wire. <sigh>

In the crystal cal. socket lived a hand made solid state oscillator that also didn't work.

In the NBFM socket lived a SS product detector that might of worked if the rest of the radio mods were ever completed.

In the middle of the IF section of the main chassis sits a 1700 KC Miller IF can and crystal socket. someone had thoughts of a double conversion mod here. :-(

The wiring around the 6V6 audio outputs is a mess, no telling what has been done here yet.....

A 12VDC home made power supply sits where the 5V4 used to live, seems it powered the added modules.... :-(

An extra hole was cut and some diodes on a PC board are being used for B+.... <sigh>

The more I looked, and the more I thought about it, the less I wanted to scrap this old war horse.

Sometimes radios just sorta grow on you. :-(

This one seemed to be screaming *HELP ME PLEASE!*

Deciding to at least stabilize the patient before sending it off for complete rehabilitation at a new home, meant ripping out the power supply mods and seeing where fixing it up some led.

Stay tuned for part two....

-Larry

Larry Ware

Admirer, Collector, Restorer of National Radio Company

receivers and other artifacts.

Orlando, Florida

lrware@pipeline.com

From: Kargokult@aol.com

Message-ID: <f9c41f2.35d90d79@aol.com>

Date: Tue, 18 Aug 1998 01:13:28 EDT

To: Old Tube Radios <boatanchors@theporch.com>

Mime-Version: 1.0

Subject: Weirdest Command Set 'Conversion'

Content-type: text/plain; charset=US-ASCII

Content-transfer-encoding: 7bit

at the little Longview WA hamfest i saw this command set transmitter. usually i like to pick up inexpensive hacked ones for friends who are interested in these and can either restore them or use the parts for others.

when i approached this one to check out the extent of modifications, i was nonplussed to see on the front panel, the backs of 4 large power transistors, roughly one in each corner. the cover wasn't fastened down, so i lifted it to look. inside where the rollercoil etc. normally resides i saw a power transformer, a choke & some other parts.

the price of the set was not high, less than the cost of the several magazines i frequently bring home from with the groceries. but it was high enuff that it seemed to me that the seller was saying, "Command Set - conversion already done for you", which i didn't see as value added, so i left it.

73, hue

Message-Id: <199808180535.AAA25723@loki.internettport.net>

From: "Steve" <scb@mail.internettport.net>

To: Old Tube Radios <boatanchors@theporch.com>

Date: Tue, 18 Aug 1998 00:15:04 +0000

MIME-Version: 1.0

Content-type: text/plain; charset=US-ASCII

Content-transfer-encoding: 7BIT

Subject: Re: More Ultramodulation

CC: boatanchors@theporch.com

>---(I thought audio was DC through 20 kHz).

Hello Ray;

I'm just a long time "kitchen table" radio and audio hobbyist but did you mean here "in the context of the (S/S) electronics"? My understanding is that the lower acoustically meaningful limit is appx 16 Hz, while electronically the 20 kHz upper limit is OK as far as a sine wave is concerned, but doesn't take velocity (rise time), to which the ear is acutely sensitive, into account. The upper sine wave passband limit of a device doesn't necessarily describe it's actual ability to carry an accurate waveform analogue of a sonic event. I know we are talking about AM communications class standards here where intelligibility is paramount and fidelity is another matter for those who care about such. I am one who delights in the joy of listening to an amateur AM station that sounds much better than a typical AM commercial broadcaster, and I've heard several. It's rather sad to listen to AM that sounds much worse than S/S SSB, especially on the BC-348 thru good 'phones. As I am somewhat hearing impaired, fidelity and intelligibility interrelate closely in my

experience.

I have followed with great interest and as much understanding as my limited background in theory can muster, the arcane discussion on ultra-modulation. Bottom line; If it sounds like crap on a properly functioning standard receiver, what good is it? I have the famous old poster of Wild Bill G.s' monstrous but ingenious homebuilt motorcycle that I have hand captioned:

"Just because a thing can be done doesn't necessarily mean that it is a good idea".

Respectfully; Steve B.

Message-Id: <199808180642.BAA26310@loki.internettport.net>

From: "Steve" <scb@mail.internettport.net>

To: Old Tube Radios <boatanchors@theporch.com>

Date: Tue, 18 Aug 1998 01:22:04 +0000

MIME-Version: 1.0

Content-type: text/plain; charset=US-ASCII

Content-transfer-encoding: 7BIT

Subject: Re: High Z 'phone call

CC: boatanchors@theporch.com

>I purchased from the broadcast radio collectors a tangled mass of old style
>high impedance earphones as listed below for some Newkirk style listening.

Hi Michael;

The sheet steel diaphragm 'phones, like the Brandes Superior (a fine vintage example) are OK for CW but don't sound all that good on voice, kinda funky/peaky. The later sealed capsule types have much better intelligibility on voice. Just guessing, but the Pax may be that type as well as the Dymac?

>How do I test them? Do they repair?

The click test with one AA cell to the tips is usually sufficient. DC resistance check will say what they can be used for as well as showing intermittent cord terminations. Low impedance 'phones, 100^Ω to 1000^Ω might be telephone switchboard use to anything with a matching Xformer like BC-348, ect. Higher impedances, 1000^Ω to 4000^Ω & up are good on early single tube regens like Aeriola Sr. or a crystal set. Crystal element 'phones, which have a very high impedance(100K up), cannot be use directly on a circuit that has a DC bias or is a direct part of a plate circuit like the early tube battery sets.

Usually the elements are OK if not tampered with. The typical problems are the tinsel cords, mainly poor connection of the termination pieces to the tinsel conductor if they are in otherwise good shape. Easy to repair if you ask someone who has done it, frustratingly difficult otherwise.

Regards, Steve

To: Old Tube Radios <boatanchors@theporch.com>
Cc: boatanchors@theporch.com
Date: Mon, 17 Aug 1998 20:37:30 CDT
Subject: Re: More Ultramodulation
Message-ID: <19980818.023817.3470.0.jackiv@juno.com>
From: jackiv@juno.com (John M Iverson)

Jack Iverson K0EWU jackiv@juno.com

On Mon, 17 Aug 1998 20:09:12 -0500 (EST) "Roberta J. Barmore"
<rbarmore@indy.net> writes:

>
>Hi!
>
> In re ultramodulation. It does work, it is more or less AM, and
>once
>upon a time, it was hot hot stuff among AM/BC stations.
> Here's the kicker: this stuff is simply a form of distortion. I am
>too
>tired and too et up (a sinus infection, and wasn't it nice of the sick
>electrician to gamely bring *that* bug into work?) to explain it in
>the
>usual dull detail. Gist of it is, you push up the *positive*
>(upward-going) modulation but not the neg. A couple of hundred
>percent,
>why, you're loud as sin.
> However, it doesn't take a Fourier Transform, or even a Power
>Ranger,
>to dope this out as crud. Get some graph paper and draw a sine wave.
>Now
>draw it as a modulation envelope at 100%. Note the waveform riding on
>the
>carrier is still a sine wave. Now take an eraser (or just scribble
>over)
>so the positive peaks are twice as high. It's not a pure sine wave
>any
>more. It's gone all lopsided. You don't speak in sinewaves but your

>own
>special personal waveform will suffer similar stretching as well.
> On voice, no less a man than Don Ameche himself (okay, he was
>playing
>Alexander G. Bell at the time [Bell lost, 2-0, in extra innings])
>showed
>we can tolerate a lot of crud and still communicate, so it's probably
>not
>too awful. Assuming your rig holds up, that is, as you've just raised
>the
>peak voltage on the tuning condenser (etc.) in the final tank, the
>current
>drawn by the modulator, and so on. Now you know why the
>ultramodulation
>rigs were purpose-built!
> In the radio-for-money biz, the Feds stepped in and limited the
>gang to
>not more than 125% positive modulation. It was a decent compromise.
> I have pointed out in the past that we don't speak in sine waves.
>Most
>people's voices show some assymetry when converted to electricity.
>Dig
>out a 'scope (don't play with ultramod without a 'scope. The Science
>Lady
>does not!) and see which way is up with your voice and favorite
>mic--then
>set up your modulator so that way *is* up when you're on the radio!
>It's
>not "ultra" but it's "some extra" depending how your voice happens to
>be,
>and can add a little more zing for very small effort.
>
> As for 100% negative mod and The Dreaded Phase Reversal, I have
>certainly seen it happen with my toy function generator. I think the
>poster to whom I am replying (Ray?) nailed it, pointing out that a
>2-quadrant modulator *with total carrier suppression* will exhibit
>this
>behavior. When we hit 100% negative, what have we done (per the
>simplistic time-vs.-voltage oscilloscopic analysis)? Why, we've
>pinched
>that ol' carrier down to zilch, and the indication of a carrier-shift
>meter will bear out that, too. More suppressed than zero is hard to
>come
>by in the real world. When I was getting paid to flog commercial AM
>rigs,
>I never really looked that close at carrier phase when setting up the
>processing--was more interested in getting as close to -100% without
>hitting it as possible. Too much soup *did* cause nasty carrier

>shifts,
>though--and that carrier level meter hadn't ought to move under normal
>conditions!
> ...Now none of this is very rigorous and might be just a tiny bit
>hard
>to see on one's spectrum analyzer. But it does happen.
>
> Loud, there's lots of ways to be loud. Build up a three-band soft
>clipper; triodes starved for plate volts make nice soft clippers.
>Split
>the incoming audio into high, mid and low with filters and feed that
>to
>your three clippers; then combine it, maybe with some low-pass
>filtering
>before you add 'em all up (watch out for phase shifts, which are the
>boojums in this particular snark hunt). Works like a champ! Hang an
>aggressive compressor in front of it and you'll be just like an ol'
>Top 40
>rocker. You'll be wanting to learn the DJ's trick of turning away from
>the
>mic to inhale, though, as every last little wheeze and gargle will go
>over
>the air in full color otherwise...! (An' turn that TV down--a serious
>compressor will suck every sound for six blocks around into the rig.
>Gated compressors, that know when to stop yankin' electrons wailing
>from
>the wire, are a better way to go. But that starts us down a long road
>into a whole other topic, and I have laundry to get in the dryer
>before I
>sleep).
>
> 73,
> --Bobbi
>
>KB9GKX "RJ" rbarmore@indy.net Roberta J. (Bobbi) Barmore
> FISTS #3388 * G-QRP #10001 * ARRL * RSGB * WIA
> Appreciator Of Vacuum-Tube Ham Gear and Vintage Keys
>roberta, you have said it all....
>

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Message-ID: <002201bdcaa9\$54a7aa80\$690adfd0@k5jv.kingwoodcable.com>
From: k5jv@von1.com (Lon W. Cottingham)

To: Old Tube Radios <boatanchors@theporch.com>
Cc: "Boat Anchors" <boatanchors@theporch.com>,
"Collins List" <collins@qth.net>
Subject: Re: D.C.Volts on 220 for 30L1?
Date: Tue, 18 Aug 1998 08:08:43 -0500
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Jack,

The Hi voltage reading should not change when you switch between 120 and 240 VAC. If you will take a close look at the primary of the power transformer, you will see that the individual windings of the primary always see only 120 VAC regardless of whether they are in series or parallel because of the common wire. This is why you do not change the value of the fuses when changing from 120 to 240 VAC operation (I am speaking of the Collins 30L-1 here, although many commercial amps are fused this way.

Most likely, your problem is only an indication problem. Remove the meter multiplier resistors individually and measure them with a good digital meter. I think you will find that they have changed in value. There was another post yesterday about this same problem. In his case, the resistors had increased in value. In your case, I'll bet, that the resistors have decreased in value.

This is a very common condition. Resistors simply change value with age and use. I automatically change out these resistors with new resistors on every amp I restore.

I think a quick word on meter shunts is in order. Meter shunts are usually nothing but some sort of resistance. Meter shunts are not multiplier resistors. In the Johnson gear (Valiant), the meters nearly always read low, and some cases, very low. The meter shunts are simply single strand of resistive wire soldered directly to the chassis. In this case, not only the wire, but the solder in the solder joint changes resistance. If the total shunt resistance decreases in value, less voltage will be developed across it, therefore, the meter current indication will be less than normal. The simple fix is to replace the shunt with modern, 1 ohm resistor, available from DigiKey), One ohm will normally be a larger value than required and will produce a higher voltage than wanted. This is good because the addition of a small, variable resistor in series with the meter allows for extremely accurate meter calibration.

73 de Lon Cottingham, K5JV
-----Original Message-----
From: Jack <friday@CCNET.COM>

To: COLLINS@LISTSERV.TEMPE.GOV <COLLINS@LISTSERV.TEMPE.GOV>
Date: Tuesday, August 18, 1998 12:14 AM
Subject: D.C.Volts on 220 for 30L1?

>Just a question on what the D.C. Volts reading should be at idle on the
>30L1 running on 220?
>Mine is running very close to 2000 Volts (fully pinned meter). In all
>respects the radio operates flawlessly, however I wondered if this is a
>normal high reading. Again, all other multimeter readings seem to be
>normal.
>If this is not right, how do I decrease it?
>Thanks and 73's,
>Jack

>
>-----
>To subscribe: listserv@listserv.tempe.gov
>and in body: subscribe COLLINS yourfirstname yourlastname
>To unsubscribe: listserv@listserv.tempe.gov
>and in body: signoff COLLINS
>Archives for COLLINS: <http://www.tempe.gov/archives>
>-----
>

Date: Tue, 18 Aug 1998 10:32:14 -0400 (EDT)
From: Nick England <nick@cs.unc.edu>
Message-Id: <199808181432.KAA23808@altair.cs.unc.edu>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Boatanchor resources

For a listing of parts, equipment, and manual suppliers (and lots more
info about boatanchors), please check out my Boatanchors Frequently
Asked Questions page:
<http://www.cs.unc.edu/~nick/rrab.faq.htm>

Additions and corrections welcomed.
73 & Have Fun,
Nick England KD4CPL nick@cs.unc.edu Univ. Of North Carolina
<http://www.cs.unc.edu/~nick/hobbies.html> Chapel Hill NC

Message-Id: <3.0.1.32.19980818103512.00ade420@vuse.vanderbilt.edu>
Date: Tue, 18 Aug 1998 10:35:12 -0500
To: Old Tube Radios <boatanchors@theporch.com>
From: "A. B. Bonds" <ab@vuse.vanderbilt.edu>
Subject: RE: A Qvestion?

Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

At 10:01 AM 8/14/98 -0400, you wrote:

>I VA= .89 Watts.

>So divide the Watts by the AC voltage you're dealing with and you'll get the current solution.

>Ed, VA3ES

>

Actually, no. The relationship varies depending on the reactivity of the load.

A. B. Bonds

Message-ID: <01BDCA9D.62912EC0@esieb.gmsiworld.com>
From: Ed Sieb <esieb@gmsiworld.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: RE: Modulation xfmr. ID needed
Date: Tue, 18 Aug 1998 11:42:54 -0400
MIME-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
Content-Transfer-Encoding: 7bit

I haven't had the opportunity to check my handbook, to determine what the nominal load

Z should be for a pair of 833's in class B. Anybody know?

If we assume, say, 3500 Volts on the plates, and divide this by the plate current, .425 A

we get approx. 8235 ohms. This would nominally be the RF sides load Z, or the Z of the

secondary of the mod. transformer. Now all we need is the Pri. side Z and we'll know what we've

got. (I have a suspicion that this iron is 1:1 Z ratio).

Ed

End of BOATANCHORS Digest 2175

>From ???@??? Tue Aug 18 18:14:43 1998
Message-Id: <199808182023.PAA12635@sco.theporch.com>
Date: Tue, 18 Aug 1998 15:22:43 CDT
Subject: BOATANCHORS digest 2176

BOATANCHORS Digest 2176

Topics covered in this issue include:

- 1) Need manual for R-389
by BOB RAGAIN <RAGAIN@hubvx6.sedalia.wireline.slbb.com>
- 2) DY-27B supply for PRC-10?
by "Mark J. Blair" <mblair@gruumsb.irv.ca.us>
- 3) unusual estate sale in Ohio
by Bill Strangfeld <bstrang@iac.net>
- 4) KWM-2A - some minor details
by "JOSE V. GAVILA (EB5AGV/EC5AAU)" <eb5agv@ctv.es>
- 5) 120 Vs 240 hookup
by k5jv@vonl.com (Lon W. Cottingham)
- 6) Distaff Doerle view cited
by MNHopkins@aol.com
- 7) Re: Modulation xfmr. ID needed
by Bill Jarvis <B.H.Jarvis@hw.ac.uk>
- 8) RE: Modulation xfmr. ID needed
by "Roy S. Morgan" <roy.morgan@nist.gov>
- 9) RE: Modulation xfmr. ID needed
by Ed Sieb <esieb@gmsiworld.com>
- 10) Re: Chassie cleaning + , semi-long
by Al Parker <anchor@coastalnet.com>
- 11) Drake Q-multiplier
by "A. B. Bonds" <ab@vuse.vanderbilt.edu>
- 12) Re: R-100/URR schematic
by Ray Mote <rmote@rain.org>
- 13) [Fwd: HELP: With KWS-1 problem]
by Dan Arney <kn6di@groupone.net>
- 14) RE: Modulation xfmr. ID needed
by John_A_King@res.raytheon.com
- 15) RE: Modulation xfmr. ID needed
by Ed Sieb <esieb@gmsiworld.com>
- 16) Ultramodulation, distortion, and workability
by thompson@mindspring.com

Date: Tue, 18 Aug 1998 8:18:11 -0600 (MDT)
From: BOB RAGAIN <RAGAIN@hubvx6.sedalia.wireline.slbb.com>
To: Old Tube Radios <boatanchors@theporch.com>
CC: RAGAIN@hubvx6.sedalia.wireline.slbb.com
Message-Id: <980818081811.20401ac9@hubvx6.sedalia.wireline.slbb.com>
Subject: Need manual for R-389

Hello fellow boatanchorites,

I am going to get the opportunity to play with an R-389 that a friend is buying. Too bad the Grimeton test is past for the year!

Does anyone have any documentation on this VLF/LF/MF radio?

Costs-plus cheerfully refunded.

73,

Bob

Bob Ragain Littleton, CO WB4ETT HamMog: 1965 radioboxed Unimog 404S

Message-Id: <199808181558.IAA22883@gruumsh.irv.ca.us>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: DY-27B supply for PRC-10?
Date: Tue, 18 Aug 1998 08:58:04 -0600
From: "Mark J. Blair" <mblair@gruumsh.irv.ca.us>

I found an ad for French-reconditioned PRC-10 sets with DY-27B power supplies, which supposedly power the set from 12VDC and fit inside the battery case along with 8 D batteries. The price seems pretty high, but I'm curious.

I've never heard of the DY-27B supply before. Can anybody tell me anything about it? The name implies that it's a dynamotor.

Thanks for any info!

--
Mark J. Blair, KE6MYK <mblair@gruumsh.irv.ca.us>
PGP public key available from <http://pgp.ai.mit.edu/>
DO NOT SEND ANY UNSOLICITED COMMERCIAL EMAIL TO THIS SITE

Date: Tue, 18 Aug 1998 12:19:11 -0400 (EDT)
From: Bill Strangfeld <bstrang@iac.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: unusual estate sale in Ohio
Message-ID: <Pine.SUN.3.93.980818120420.15234A-1000000@crystal.iac.net>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

There is an unusual estate sale in central Ohio with about 3,000 square

feet of electronic surplus. Most of it is from the 1940s and 1950s. There is NOS and surplus military and civilian components, test equipment (some GR), connectors, cables, cabinets, spools of wire, meters, aircraft instruments, waveguides, power supplies, x-ray machines, transformers, etc. There is also optical and mechanical surplus. Substantial amounts have been sold already including most of the tubes, WW2 radar stuff, and electronic counter-measures equipment, and all of the communications gear, and hi-fi items. But there still is so much that you have to see it to believe it.

If you are interested, you must go there to see it. It is in Springfield, Ohio, near Dayton, just off I-70. The seller is NOT able to describe items over the telephone and will NOT ship. Please do not ask him to. But if you go there, he will let you browse to your heart's content and his prices are very reasonable. He will sell one piece or as much as you can haul away. If you want to make an appointment, call Reece between 9 and 11 am, Monday through Friday, at 937-323-6300. I have no connection except as a satisfied customer and am posting this for the seller who not have net access.

If you go, plan on getting hot, dirty, and happy. Take boxes. Reece needs to leave by noon on most days so you should plan to end your visit by then.

73
Bill

Message-Id: <3.0.1.32.19980818181202.007cab60@pop.ctv.es>
Date: Tue, 18 Aug 1998 18:12:02 +0200
To: Old Tube Radios <boatanchors@theporch.com>
From: "JOSE V. GAVILA (EB5AGV/EC5AAU)" <eb5agv@ctv.es>
Subject: KWM-2A - some minor details
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Hi gang!

Yesterday I managed to fix an annoying trouble I had with my beautiful KWM-2A. There were some points at the dial (at 190 and 90 kc, approximately) which had a non smooth movement. In fact, there was some friction noise at those positions and the 'feeling' was really bad. As when I got the set, the former owner told me that the dial knob mechanism was probably bent, I suspected that could be the cause of my trouble. Visual inspection didn't reveal any trouble, though. Of course, my eyes are not NTIS traceable calibrated ;-) so that was not definitive...

But then the bulb lighted over my head... I had got an IDEA!!!. What about

the synchronizing gear (the ones which synchronizes the movement of both dials, in order to expose the current kc setting)?. And just an small work with the Philips screwdriver later, the problem was gone :-)! I put it the farther I could from the dials (i.e, looking from the rear of the front panel, to the north-east). Now the movement is smooth all over the PTO range. Hooray!!!!.

Now let's go with an unsolved trouble... From time to time, when I power up the transceiver (cold start), I get a 'pop' noise from the HV rectifier, which is no less than an spark inside the tube. The fuse keeps working and all is fine after that, but I don't feel comfortable with it. I have changed the tube with two diferent brand NIB ones to no avail. Any idea?.

And, to end this message, I have updated the "Guest Radio Stations" section in my WEB page to include three new pictures (thanks to W6ABC, W6ERP and K7OPT). Please, keep the pictures coming!.

Best regards.

JOSE

73 EB5AGV / EC5AAU
JOSE V. GAVILA
Ausias March 46, 15
46910 Benetusser - VALENCIA
SPAIN

*** VISIT MY VINTAGE RADIO SITE - updated 18-August-1998 ***
<http://www.geocities.com/SiliconValley/6992/>
e-mail: eb5agv@ctv.es & eb5agv@amsat.org

Message-ID: <006701bdcac9\$b7ec5d00\$690adfd0@k5jv.kingwoodcable.com>
From: k5jv@von1.com (Lon W. Cottingham)
To: Old Tube Radios <boatanchors@theporch.com>
Subject: 120 Vs 240 hookup
Date: Tue, 18 Aug 1998 12:00:30 -0500
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Greetings to all,

I was rather pleased at the early response I have received about my post on meter shunts and transformer primary hookup. I was pleased to see that most respondents understood what I was trying to say. Yes, there is a big difference between meter shunts and meter multiplier resistors. Sometimes they are used separately, and sometimes they are used together. Unfortunately, they both change with age.

IR drop is IR drop. Usually, one can not change his existing household wiring very easily. You are pretty much stuck with it. What you have is what you got. Also, there is a practical limit to the size and length of AC power cords. Most household 120 volt circuits, by design, are rated for 15 amps. Common household wiring, for 120 volt circuits use #14 wire (to meet most codes). If your house is wired this way, you will probably see a decrease in transformer output when demanding power from the unit. You should, again I say SHOULD, not see any difference when the unit is producing low power (IR drop again) The household wiring and the power cord are the limiting factors. Wouldn't it be nice to have your 120 VAC outlets wired with #12, or even #10 wire. Or would it? Most codes only allow a maximum of 20 amps on 120 VAC circuits. Try to buy 120 VAC plugs and sockets rated at more than 20 amps and see what you can get. Of course, they can be had, if you want to pay the price. But then, see what you run into with your codes. In most cases, #10 wire would be overkill. However, I used #8 wire in my shop for the outlets that supply AC to my BC-610's and T-368's.

The common, two-winding primary transformer, used in almost all homebuilt and commercial amps today has no idea what voltage it is connected to. From a practical standpoint, the transformer, at least each individual winding, always runs from 120 VAC. When the windings are paralleled, for 120 VAC operation, this is easy to see. When the windings are seriesed, for 240 VAC, this is not so readily apparent. But, consider the common wire hooked to the centertap of the seriesed windings. The seriesed windings acts as an equal voltage divider. The common wire hookup assures this. Measure the voltage across each winding and you will note that it is 120 VAC. With this hookup, each winding always sees 120 VAC. The total power demand is the same for each winding, thus the current drawn by each individual winding is the same. Why change the fuse?

One respondent mentioned that fuses should be changed if there is only one fuse and not changed if there are two fuses. As a general rule, this may be OK. But, this is only true if there is only one fuse. If there are two fuses, it depends upon where in the circuit the fuses, or circuit breakers, are placed. If the fuses are placed ahead of the point in the circuit where the individual windings are connected together, the fuse must be changed when changing voltages because the fuse sees the combined current draw of both windings. If, on the other hand, the fuses or CB's, are placed after the point in the circuit where the windings are hooked together, there is no need to change fuses when changing from 120 to 240 VAC operation

because the fuses (CB's) will be in the individual windings of the primary of the transformer and will see only the current drawn by that individual winding. This latter method of fusing has been in general use in commercial amps for the last 20 to 30 years. Note, I said common use, not everything. Heath, Collins, and Kenwood and just three manufacturer that have used this fuse hookup in many of their more common products. Look in the SB-200, SB-220, 30L-1, and TL-922 manuals. They all use this hookup and tell you not to change the fuses when changing from 120 to 240 VAC operation. Two of these very common amps use CB's as fuse. Does anyone think that you should tear in to the rig, unsolder the original CB's and replace them with solder in another value of CB when changing primary voltage?

Early Heath Kit manuals were an excellent source of radio and power theory. This changed throughout the years as Hams became more interested in operating, rather than understanding, their gear. Sometimes in the 1970's, Heath made a reprint, or update, to the SB-220 manual. In this one printing, they omitted the earlier primary (CB) wiring description and, in fact, printed a completely wrong description of how the circuit works. When I notices this, I immediately telephoned them and told them about this error. They said that they had many, many letters and phone call about the subject and were quite aware of the problem. Shortly after that call, I received several corrected pages from Heath to staple over the existing pages in my manual. Later versions of the Manual were corrected. There are probably many manuals out there that were never corrected. I still have those corrections.

Read the manual. Study the schematic. Each piece of equipment should be considered a separate entity and handled with TLC.

73 de Lon Cottingham, K5JV

From: MNHopkins@aol.com
Message-ID: <a9043f77.35d9b718@aol.com>
Date: Tue, 18 Aug 1998 13:17:07 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Mime-Version: 1.0
Subject: Distaff Doerle view cited
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit

The citation Hue Miller searches for is:

"The Doerle Shortwave Receiver," Ham Radio Horizons Magazine, Orr, W. (W6SAI), 1979, Apr. p 50. Like all of Bill Orr's historicals, it is well written and authoritative.

When I posted yesterday's review of the new Lindsay book, "How to Build the Twinplex Regenerative Receiver," I gave Mr. Lindsay's version of events. In a longer, scholarly version of the same review for our local radio club I cite both, but a simple Internet posting would not seem to be the place for arcane scholarly arguments of attribution.

But if you insist: I don't think it matters whose version is right. To my mind the term "Doerle" quickly became a generic for regenerative receiver of any stripe, just as hams called them Bloopers. In the same article Mr. Miller is searching for, Bill Orr shows a picture (page 54) from Short Wave Craft magazine of 16 builders and six sets at a meeting of a "Doerle" club. The sets are no more alike than the persons.

73 de ab5L, michael in dallas, student of Tecraft and International Crystal (ICM) ham products and mementoes of Six Meters' Golden Age: 1957-58
Michael Hopkins
Box 226841
Dallas, TX 75222 MNHopkins@AOL.com

Message-Id: <199808181704.SAA02578@punt2.hw.ac.uk>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
From: Bill Jarvis <B.H.Jarvis@hw.ac.uk>
CC: boatanchors <boatanchors@theporch.com>
Date: Tue, 18 Aug 1998 18:03:28 +500
Subject: Re: Modulation xfmr. ID needed

On 1998-08-18 esieb@gmsiworld.com said:

>I haven't had the opportunity to check my handbook, to determine
>what the nominal load Z should be for a pair of 833's in class B.

>Anybody know? If we assume, say, 3500 Volts on the plates, and
>divide this by the plate current, .425 A we get approx. 8235 ohms.

>This would nominally be the RF sides load Z, or the Z of the
>secondary of the mod. transformer. Now all we need is the Pri.
>side Z and we'll know what we've got. (I have a suspicion that
>this iron is 1:1 Z ratio). Ed

>From "The Radio Handbook" (1946):

Max Vplate 4000, Nominal load impedance (plate to plate) in Class B,
11000 ohms. (Grid bias -100 V.) (Other details available.)

===== ===== ===== BILL J. ===== ===== =====

GM8APX, qthr

Edinburgh, Scotland, UK

risne scire quod credam? Credo orbes volantes exstare

Net-Tamer V 1.12 Beta - Registered

From: "Roy S. Morgan" <roy.morgan@nist.gov>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: RE: Modulation xfmr. ID needed
Date: Tue, 18 Aug 1998 13:50:28 -0400
Message-Id: <003401bdcad0\$aafcbf6b0\$325f2e82@morganrswnt.dt.navy.mil>
Mime-Version: 1.0
Content-Type: text/plain;
 charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Ed and Anchorites,

833's ic class B audio service:
P-P Load impedance is 11,000 ohms at Ep of 4000 volts, Ip of 900 ma.
DRiving power 38 watts, out put power 2700 watts.
(The Radio Handbook 11th Ed. 1947 Editors and Engineers.)

Your Ep/Ip load calculation is for the RF, modulatED, stage when you want to know the load presented to the modulation transformer. Triode and tetrode plate-to-plate loads for audio operation are estimated differently (usually from graphs of plate load lines.

Keep em glowing!

---Roy Morgan
K1LK Y since 1959
and who does not own even one 833.

> -----Original Message-----
> From: Ed Sieb [mailto:esieb@gmsiworld.com]
> Sent: Tuesday, August 18, 1998 11:43 AM
> To: Old Tube Radios
> Subject: RE: Modulation xfmr. ID needed
>
>
> I haven't had the opportunity to check my handbook, to determine
> what the nominal load
> Z should be for a pair of 833's in class B.
...

Message-ID: <01BDCAB1.B4C9FB40@esieb.gmsiworld.com>
From: Ed Sieb <esieb@gmsiworld.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: RE: Modulation xfmr. ID needed
Date: Tue, 18 Aug 1998 14:08:37 -0400
MIME-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
Content-Transfer-Encoding: 7bit

Bill, Roy and Anchorians,

Yes, my calculations were for the _RF_ side, not the class B side. Sorry, I should have made that a bit clearer when I wrote it.

11,000 ohms, eh? So that would suggest an 11000 ohm pri, to an approx 8000 ohm sec.

Or, a 1.4:1 Z ratio. [I hope I'm correct! :)]

This 110000:8000 ratio is quite common and is used on my Electro-Engineering iron in my RCA BTA series.

Any other ideas, corrections, or comments?

Ed.

Message-Id: <3.0.5.32.19980818140825.00802570@mail1.coastalnet.com>
Date: Tue, 18 Aug 1998 14:08:25 -0400
To: Old Tube Radios <boatanchors@theporch.com>
From: Al Parker <anchor@coastalnet.com>
Subject: Re: Chassie cleaning + , semi-long
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

> Here's one for the experienced chassis cleaners . How do you get the
>inside chassis clean without removing every part on it ? I have tried
>electronic cleaner / degreaser , but it evaporates too quickly. Any other
>cleaning agents that work well and won't damage electronic components ?
>Any and all comments welcome !!! Tnx ...
>73,Steve Hurst

Hi Steve, & others,

Tnx to Art K5FNQ for copying a few previous posts on the subject. I had a lengthy bunch saved earlier in the yr, but dumpter glitch wiped out a lot. baswaplist is not a place for this discussion, that's where I found it,

but have not copied there. Did incl the 2 boatanchors lists, and I'll probably not get on the nat'l & swan, as I'm not listed there. The following may be more than the question asked for, but --

I've had thoughts on the subject this past week, as I've recently been looking at a few I've cleaned in the past 6-12 mo.s, and one done just this month.

I have used Ivory Concentrated Dishwashing Liquid (hand/sink type) soap, with judicious application of water, and brushing with toothbrush-type & bottle brushes for the crevices. Small paint brush also very useful. The contents state "surfactants", ionic & non-ionic, no soap noted. There's no substitute for some hand labor (or is it just finger work?). Forceps, or medical "clamps", are very useful in getting a small cloth wad into tight spots for rubbing. They come with straight & curved tips. (also great for holding small components in preparation or placement for soldering in tight places)

I have used Dow Scrubbing bubbles also, but prefer not, just doesn't seem like strong chemicals can ever really be removed/rinsed. This is partly so with the "hand safe" soapy stuff, too. A lot was posted on the ionic process a while back.

I have rinsed with a hose, almost a requirement with the ScrubBub stuff, but that requires much care to keep the spray out of transformers, IF cans, etc. I prefer using the brushes to rinse, with frequent rinsing of them. Flow the water on, position the chassis to let it run off easily/quickly. I just did an RBL rcvr, which was in good condx, but had some surface corrosion on the chassis in one area. I did the soap routine, got nice & clean, with scrubbing. Did get some distilled water to use as a rinse, as suggested by many. Seems to take a lot of rinsing, as I guess it acts like soft water, & does make things that are soapy, still feel soapy. But that makes me think that when it is done, you've got the soap out of there much better.

I find Murpy's Oil Soap, with vigorous brushing, does quite well on nicotine/skin-oil accumulations around knobs,etc., particularly helpful on wrinkle finish. Made the RBL cabinet look good.

Recent experiences which make me reconsider the situation-- Hallicrafters SX-101, HT-32, HT-32A. The 32A has the gold finish on the chassis, cleaned nicely, but I understand that care needs to be taken to not "overdo" it. - RBL, 1945 issue TRF regen. I just got the 32A out of it's cabinet to get to it electrically. I had cleaned it abt 5 mo.s ago, it spent some time in the garage in CA, low humidity, then across country to NC. Been inside for 3 mo.s. surprised to find it a little dusty inside, probably from the garage stay. Have noted on it, & others, including the RBL, which was only done 2 wks ago, that there does appear a slight dry-ish buildup, like slight oxidation, on the cleaned, unplated or un-coated surfaces. It's possible that this is oxidation of the steel, and aluminum, due to any oily protection having been removed. This turned up quickly on the RBL, which had the distilled water rinse. The SX-101, and HT-32, done 8-10 mo. ago, have some indication of this. They've been kept in the shack, used weekly.

Some one recently asked if DeOxit should be sprayed on such cleaned

surfaces. I think that's expensive, but might do a good job of protection.

I have decided to rub a LIGHT coating of GC DE-OX-ID contact cleaner, containing kerosene, refined mineral oil, & perchlorethylene, over unprotected metal surfaces. It stinks, but not like WD-40, which also could be used (I know, some will stop reading here & trash all above remarks). Gummy Bear likes it, and I've met him, he's not suffering from exposure. Any such coating needs to be very light, to avoid dirt accumulation.

Good warming/drying methods after any water or liquid application must be followed.

Paste wax applied to knobs, after cleaning in the Ivory solution with vigorous brushing, makes them approach new looking. similar for panels.

Whatever we use, just think - these beauts have survived 40-50 yrs or more, sometimes very well, are we doing something that will not allow them to last another 50 yrs, by giving us instant gratification of beauty at the risk of accelerated corrosion?

Barry Ornitz and others covered the chemical aspects more than once in the past 2 yrs. Wish I hadn't lost my personal archives on the subject. Maybe this'll start another thread.

73,
Al, W8UT
New Bern, NC
Boat Anchors appreciated here
anchor@coastalnet.com

Message-Id: <3.0.1.32.19980818132637.00aa26b0@vuse.vanderbilt.edu>
Date: Tue, 18 Aug 1998 13:26:37 -0500
To: Old Tube Radios <boatanchors@theporch.com>
From: "A. B. Bonds" <ab@vuse.vanderbilt.edu>
Subject: Drake Q-multiplier
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Just returned from a shopping expedition in which a Drake 2CQ climbed under my arm. I don't have a 2C, but it was cute and the price was right.

This gizmotch allegedly does q-multiplier duty. I've been thinking about the possibility of using it with my SW-4a, which could use some refinement (and the speaker of the 2CQ is handy as well). Looking at the 2C print, there are three accessory sockets, CAL, 2CN and NB. One would think that the CAL and NB would be for the calibrator and the noise blanker, respectively, which leaves the 2CN socket. This has fil and B+, as it oughta, and a line going to the grid of the second mixer, a 12BE6. Does anyone know authoritatively if that is where the Q-goo is injected? The SW-4a has an identical accessory socket, but the signal line goes to the

antenna, so it probably is intended for a calibrator.

A. B. Bonds

Date: Tue, 18 Aug 1998 11:41:52 -0700 (PDT)
From: Ray Mote <rmote@rain.org>
To: Old Tube Radios <boatanchors@theporch.com>
cc: Boatanchors <boatanchors@sco.theporch.com>
Subject: Re: R-100/URR schematic
Message-ID: <Pine.SUN.4.02A.9808181139310.17406-100000@coyote.rain.org>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Pull the chassis out of the case, then look at both sides of the fiberboard support (shelf) for the chassis -- it ought to be painted on one of the two sides! (Faked me out also, the first time I tangled with an R-100. :-)

Ray Mote, K5FKT <rmote@rain.org> Oxnard, CA

Message-ID: <35D9D758.6372D206@groupone.net>
Date: Tue, 18 Aug 1998 12:34:49 -0700
From: Dan Arney <kn6di@groupone.net>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: [Fwd: HELP: With KWS-1 problem]
Content-Type: multipart/mixed; boundary="-----8FD9933A7B04C1E93857C0E1"

This is a multi-part message in MIME format.

-----8FD9933A7B04C1E93857C0E1
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

-----8FD9933A7B04C1E93857C0E1
Content-Type: message/rfc822
Content-Transfer-Encoding: 7bit
Content-Disposition: inline

Message-ID: <35D9970B.270E0A38@groupone.net>
Date: Tue, 18 Aug 1998 08:00:27 -0700
From: Dan Arney <kn6di@groupone.net>
Reply-To: kn6di@groupone.net
Organization: Global Pack & Mail
X-Mozilla-Draft-Info: internal/draft; vcard=0; receipt=0; uuencode=0; html=0;

linewidth=0
X-Mailer: Mozilla 4.02 [en]C-DIAL (Win95; U)
MIME-Version: 1.0
To: boatanchors@theporch.com
Subject: HELP: With KWS-1 problem
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

In trying to bring my KWS-1 to life, am having problem in controlling the Bias. I can get aboout 30 to 50 ma of plate current then it goes full scale and starts thumping/motorboating (your choice). Have to use only one rectifier to keep it from dancing ittself right out of the shack. Have set PA tunig/load to chart. I have correct voltage to caps of rectifiers. Using 3B28's in place of 866's. Have 866's coming. I am open to any and all suggestions as I would like to get the unit up and running.

Furthermore I am cutting my teeth on this one, as it is my 1st KWS-1. Have 2 75A4's. One is interconnected.plus power meter and dummy load. 220V feed, blower good air, all interconnects good contact. With both rectifiers in the plate voltage/current goes full scale and blows the 10A fuse. With only 1 rect. I have some sort of control (teensy bit)Hi. TIS for all of yooour great forthcoming info.

73 Hank KN6DI

-----8FD9933A7B04C1E93857C0E1--

From: John_A_King@res.raytheon.com
To: Old Tube Radios <boatanchors@theporch.com>
Message-ID: <85256664.0060BBC3.00@ressud-as01.res.ray.com>
Date: Tue, 18 Aug 1998 13:59:24 -0400
Subject: RE: Modulation xfmr. ID needed
Mime-Version: 1.0
Content-type: text/plain; charset=us-ascii

I nursed a Gates BC1-G along for 10 years or so at an AM daytimer.

The 833's all ran at 2450 volts. The RF finals pulled .590 A at 1 KW out. The modulators idled at 40mA per tube.

The RF final plates showed almost no color when finely tuned (don't all broadcast 'engineers' tune up in the dark?)

At 120% positive peaks with fairly dense processing, the modulator plates very definitely showed color - all the way to orange. Absolutely the Loudest Kilowatt on The Air.

HV to the RF final is shunt fed through a choke - DC doesn't go through the secondary of the mod transformer. And as one poster mentioned, there is a tertiary winding that provides some modulation to the low voltage feeding the 807 RF drivers.

73,

John King WA1ABI

Message-ID: <01BDCAC3.664567E0@esieb.gmsiworld.com>
From: Ed Sieb <esieb@gmsiworld.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: RE: Modulation xfmr. ID needed
Date: Tue, 18 Aug 1998 16:15:14 -0400
MIME-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
Content-Transfer-Encoding: 7bit

Hi John,
I'd mentioned the "modulation reactor" in a private email. Typically they're around 50 Hy or so.

So, 2450 divided by .590 gives ... 4125 ohms. Very interesting!!!
There are lots of RCA 1 KW mod iron, type 900763-501 around the flea-markets and other sources.
I've got a couple. Their marked impedance's are 10,500 ohms primary and around 4500 ohms, secondary (I can't exactly recall right now). This Z combo will match anything from 833's to 4-400's, etc. Very nice transformer.

Ed

From: thompson@mindspring.com
Message-ID: <00d601bdcae6\$a1949500\$033e56d1@default>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Ultramodulation, distortion, and workability
Date: Tue, 18 Aug 1998 16:27:32 -0400

After I wrote the subject line I thought boy buzz words from the past...

As one who operated a reasonably effective AM station in the late 50's, I decided I would comment more on the effectiveness rather than mathematics or theory. Certainly the use of any type of clipping or negative peaking

(thats what REL called it) introduced distortion to the transmitted AM signal.

In 1958 there were many, many AM operators around the world and QRM even on 10 or 15 meters was often overwhelming for most of our receivers. A French station operating on 21.240 would call CQ and tune up the band. Often the power did not matter so much as the clearness of the frequency and the modulation used. W5GRP worked his share of Phone DX on 15 with a Viking Ranger and 3 el beam at 45'. He usually was high in the band. Another ham using the Gonset twins was found high in the band (21360 or so) talked with New Caledonia. I waited for their 45 minute QSO to end to make contact.

I remember when Somalia became free from Britain and Italy. A group of Texas oil guys were there (they were new hams at the time) and they came on the air on 15 and for days the entire phone band was filled with S9 signals calling them. I had to go to 21400 to work them on a regular sked and parts of my QSO was blotted out by frantic callers.

I won't even try to describe 20 meters AM (we only had 14200 to 300 then).

With all that QRM how did we break thru the QRM even to have a QSO from W5 to W2. First most used good rigs with good modulators. Most added the 6AL5 clippers that W6SAI put in his audio drives/low power modulators. Many used filtering (this worked with phasing SSB too)with 88mh toroids. Commercial gear had some of these circuits too. We ran reasonable power.....400 or 500 watts was enough...thats why the Globe King's were so popular. Medium power was the Globe Champ or Valiant. The lucky few had KW-1's or big homebrew rigs. Just look back through old CQ's and QST's at the rigs in Eimac or RCA ads.

The last resort to have outstanding signals was to use ultramodulation. W4CJL and W3PHL were the outstanding leaders. Call it ultramodulation, super modulation whatever....the practice was to run more modulation than carrier and then contain the distortion with circuits and gimmicks. I have a little W3PHL modulator that a guy at WLBT in Jackson, MS made. He used it with a Ranger and I used it for a while with an Elmac AF-67 and A-54H. You better have a scope and two tone control to keep it in bounds. I remember W3PHL having a running battle with the FCC on 40 meters. He finally won by demonstrating the rig with test gear attached and writing a paper on his system.

WRL or Globe Electronics coined a term "talkability" (short lived of course).

The bottom line is that effective AM operation meant using techniques to make your audio break through the QRM. You heard little broadcast quality audio!

W4CJL has written on the subject in Electric Radio and in CQ. W3PHL's paper

was printed in several magazines. Of the two W4CJL
makes more sense to me...if you don't believe it listen to him on 3885
late at night Alabama time.

73, Dave K4JRB

End of BOATANCHORS Digest 2176
